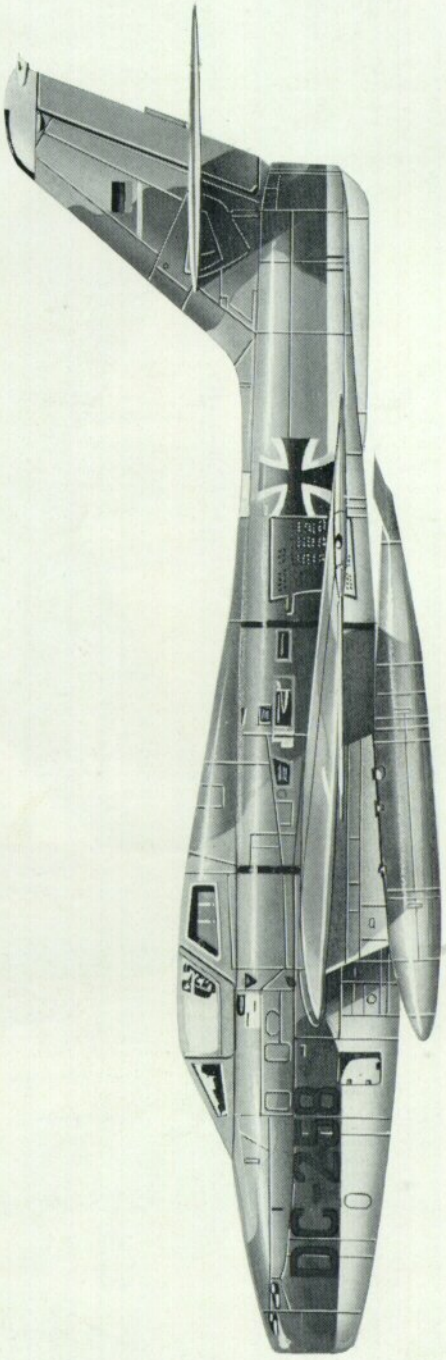
PROFILE
PUBLICATIONS

The Republic F-84F Thunderstreak



NUMBER 95
TWO SHILLINGS

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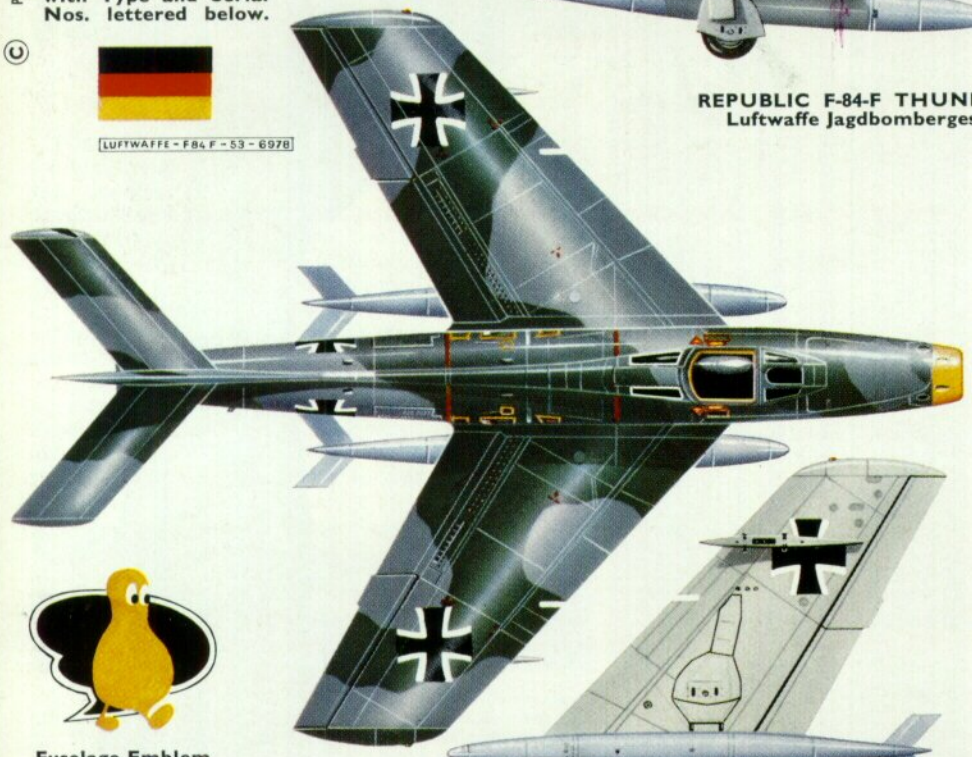
Fin National Marking with Type and Serial Nos. lettered below.

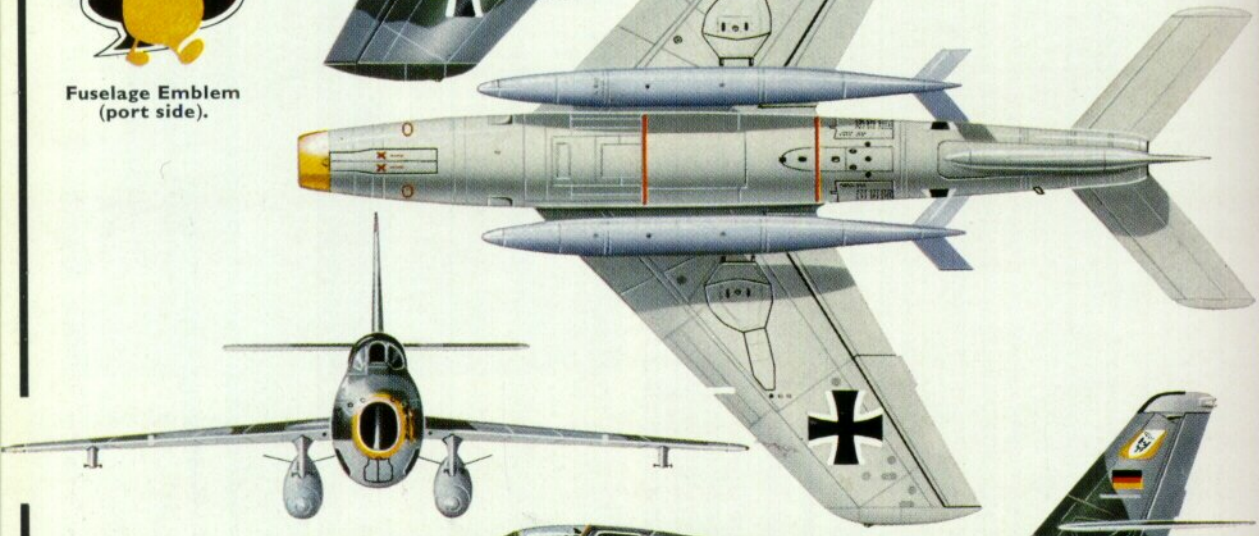
LUFTWAFFE - F84 F - 53 - 6978

REPUBLIC F-84-F THUNDERSTREAK of the Luftwaffe Jagdbombergeschwader, Jabo 33.



Jabo 33 Insignia.

Fuselage Emblem (port side).



5′ 10′

The Republic F-84F Thunderstreak

by Ray Wagner

An F-84F of the Luftwaffe's Jagdbombergeschwader *32.* (Photo: Gerhard Joos)

Long a familiar sight in Western European skies, the Republic F-84F has been used by the air forces of seven nations, and is descended from the first American jet fighter of the post-war generation.

When design of the F-84 series began in November 1944, the first innovation was the use of an axial-flow turbojet, General Electric's J-35 (then TG-180). This engine allowed use of the first nose-air intake on an American jet, with straight-through air flow to the tailpipe, and less fuel consumption than the centrifugal engines of earlier jet fighters, like the F-80. The small diameter of the axial-flow unit permitted a streamlined low-drag fuselage whose maximum width was set by powerplant width, and whose vertical dimension was determined by cockpit height.

Since range, as well as high speed, was a consideration, wing shape had to forgo a thin profile and low aspect ratio in favour of a ratio of 5·10 and an airfoil section thick enough to contain fuel tanks and landing gears. The critical Mach number of this straight conventional wing was considerably below that of the fuselage, and was the primary limitation of performance on early F-84 models.

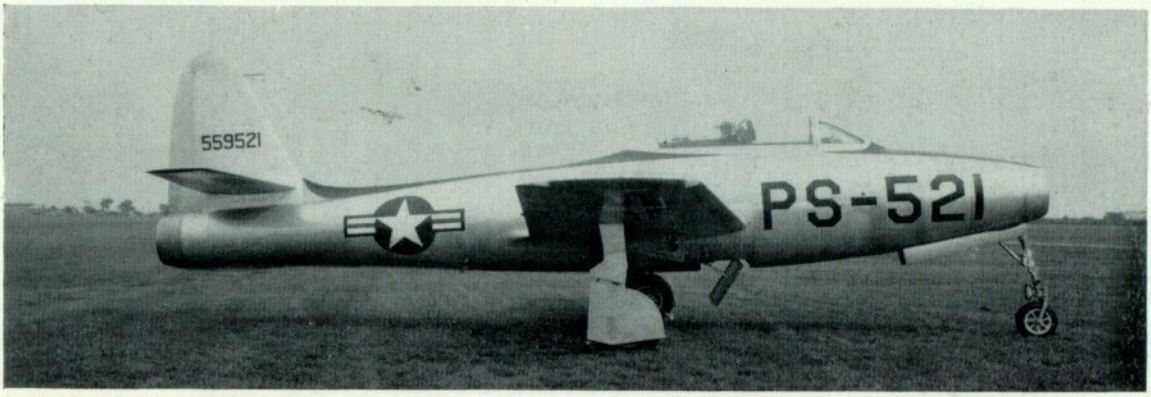
Three prototypes, designated XP-84, were built with General Electric J35-GE-7 turbojets of 3,750 lb. thrust, but this engine was turned over to Allison for mass production. The first XP-84 was completed in December 1945 and flown from Republic's factory in Farmingdale, New York, to Muroc Air Force Base, California, aboard the Boeing XC-97 transport.

On 28th February 1946 the first flight was made at Muroc by Major William A. Lien. The second prototype was prepared for a record attempt and attained 611 m.p.h. on 7th September 1946; a U.S. speed record, but not high enough to exceed the world's record then held by a Gloster Meteor F.4.

An initial production contract for 100 aircraft had been approved in January 1946, and the first fifteen were completed by April 1947 as YP-84As with Allison J35-A-15 jets, and assigned to the Muroc and Wright-Patterson bases for tests and pilot familiarisation. The remaining eighty-five were completed as P-84Bs from June 1947 to February 1948 with such additions for service operations as an ejector seat, radio compass, and new M-3 guns to replace the six M-2 guns of war-time use.

Most of these aircraft went to the first Air Force unit operational with Republic jets, the 14th Fighter Group at Dow Field, which used the P-84B from November 1947 until the group's inactivation in October 1949. Performance of the P-84B provides a benchmark for measuring progress to the F-84F. Top

As the first Republic jet in service, the P-84B-1 introduced the axial-flow powerplant and the speed brake below the cockpit. (Photo: Bowers' Collection)



Bomb-carrying and long-range capabilities appeared with the F-84E-1. (Photo: Republic)

speed was 587 m.p.h. at 4,000 ft., at 13,465 lb. combat weight, and 786 gallons of fuel in fuselage; wing and wingtip tanks permitted a range of 1,282 miles at 416 m.p.h. Climb was 4,210 ft. the first minute, and service ceiling was 40,750 ft.

New orders made in June 1947 added 141 more P-84Bs and 191 P-84Cs. These models added a ground attack capability, beginning with the P-84B-20, with eight five-inch, 140-lb. rockets on retractable launches under the wing, outboard of the landing gear.

Republic's deliveries of Thunderjets reached one a day during 1948, as the F-84C used the new "F" instead of "P" designation and replaced the J35-A-15 with the J35-A-13's simpler fuel system. Improved maintenance features were introduced on the F-84D, of which 154 had been ordered. The pitot tube was shifted from the tail fin to the nose duct air divider, a mechanical landing gear retraction system replaced the older hydraulic one, the fuel system winterised, and a hinged gun deck cover was provided. The F-84C and F-84D were similar to the B model in appearance and performance, aside from a slight reduction in climb due to about 400 lb. more weight.

At this point, the Republic Thunderjet's performance had been far surpassed by the F-86A Sabre, with its swept-wing and J-47 engine. But a new Thunderjet, the F-84E, was designed with range and ground attack capability unmatched by any contemporary jet type, and a contract for 409 was approved in December 1948.

The first F-84E, *49-2022*, flown on 18th May 1949, had the 4,900-lb. thrust J35-A-17, more fuel, and a longer, roomier cockpit with the new Sperry radar-ranging gunsight. The fuselage length was increased from 37 ft. 5 in. to 38 ft. 6 in. Fuel load including two 230-gallon tip tanks was 912 gallons, giving a 1,485 mile range. Two more 230-gallon tanks could be carried on inboard pylons for a total of 1,372 gallons and ferry range of 1,950 miles. Gross weight had increased from 19,689 lb. in the B to 22,463 lb. in the E.

Top speed of the early F-84E was 613 m.p.h. at sea level with 14,720 lb. combat weight, climb was 6,061 feet the first minute, and service ceiling of 43,220 feet. More important than its capabilities as a long-range escort fighter, was the F-84E's ground attack potential. Two 1,000-lb. bombs, or two 1,200-lb., 11·75 inch "Tiny Tim" rockets could replace the inboard drop tanks. For short ranges, an array of thirty-two five-inch rockets could be carried below the wings. More strength was added to the wing structure, and serviceability improved with 180 access doors, quick-disconnect on all electrical cables, and other improvements.

The F-84E was the model that equipped most of the six U.S.A.F. wings using Thunderjets when the Korean War began, and it was first taken into combat on 7th December 1950 by the 27th Fighter-Escort Group. In Korea, Republic's fighter was an immediate success as in ground support missions, but fighter missions flown to escort B-29 bombers proved the straight-wing F-84E too slow to match the swept-wing MIG-15.

SWEPT WING VERSION

A swept-wing version of the F-84 had been planned late in 1949 to raise its speed to F-86 levels, while retaining, and even increasing, its superior ground attack capabilities. The last, and 409th, aircraft of the F84E contract was selected as the swept-wing, YF-84F prototype.

Construction of the aircraft, *49-2430*, took 167 days from the date the company's experimental shop received the first engineering drawing until the prototype was taxied under its own power. The aircraft was then dismantled and flown to Muroc from Farmingdale aboard a Boeing C-97 and Fairchild C-82.

On 3rd June 1950 Republic Director of Flight Otto P. Hass took the prototype for its first flight. At that time it was designated YF-96A because of its extensive design changes, but on 9th August the designation reverted back to the original YF-84F.

Essentially, the fuselage was that of the preceding F-84Es, including the pilot's canopy and the speed brake underneath the fuselage. The tail was swept back, and an entirely new wing, swept back 40 degrees at the ¼-chord line, was used. Instead of the 260 sq. ft. area and 36 ft. 5 in. span of the older models, the YF-84F had 325 sq. ft. of area and 33 ft. 7 in. span. The airfoil was 10% NACA 64A010 section, with maximum thickness at 45% chord. Wing cathedral, or droop, was 3 degrees, 30 seconds.

Powered by an Allison J35-A-25 of 5,200-lb. thrust, the YF-84F weight was 12,150 lb. empty and 23,230 lb. gross, and could carry 1,505 gallons of fuel. Performance included a top speed of 693 m.p.h. at sea level, a range of 1,716 miles at 514 m.p.h., a 38,300 ft. service ceiling, and climb to 35,000 ft. required 14·8 minutes.

Briefly designated YF-46A, the swept-wing prototype 49-2430 *is seen here with external load.* (Photo: Republic)

The prototype after being rebuilt with the British Sapphire engine. (Photo: Republic)

The first production F-84F-1-RE with new canopy. (Photo: Republic)

F-84F-20-RE with all four drop tanks. (Photo: Roger Besecker)

NEW ENGINE

Although a letter contract for production was received in July 1950, much development work would remain before the old straight-wing types could be actually replaced on the production line. Although the speed already pressed even the aircraft limitation extended by the swept-wings, more power was badly needed to improve take-off, climb, and high altitude performance. For this purpose, examples of the Armstrong-Siddeley Sapphire axial-flow jet engines of 7,200-lb. thrust were ordered from Britain, and arrangements were made to have the Sapphire produced in the U.S.A. under licence by Curtiss-Wright as the J65.

Use of the larger engine required re-design of the fuselage to increase depth by seven inches, and enlargement of the nose intake to elliptical shape. The prototype was flown for the first time with an imported Sapphire on 14th February 1951.

Two pre-production YF-84F prototypes, *51-1344* and *51-1345*, with Sapphire engines were built by Republic in 1951. The second was completed with wing root air intakes, leaving the nose with a solid cover. Another innovation was the reinforced canopy with a flat-front windshield, instead of the earlier V-front.

The wing root intakes resulted in thrust losses, and were not adopted for production fighters, but they did permit a roving camera nose for a reconnaissance version. The next version to appear was a pre-production YRF-84F, *51-1828*, flown in February 1952, which had the wing root ducts and canopy of its predecessor, but added a nose large enough to accommodate six cameras.

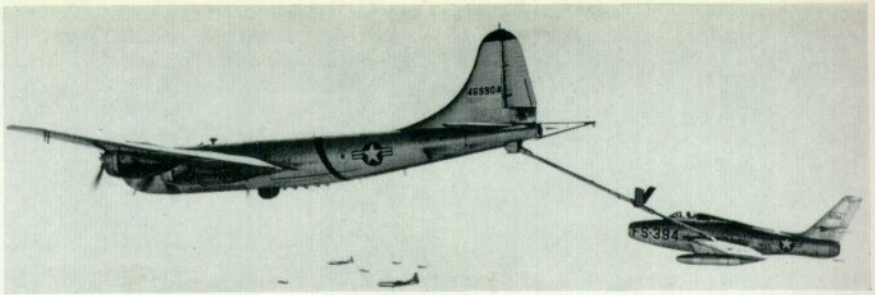
Another innovation planned for production aircraft was the use of heavy press forgings in the wing structure. As it turned out, the only forge press in the country suitable was tied up by the B-47 programme, and a breakdown in the press further aggravated the situation. The wing structure had to be re-designed to utilise existing tools and facilities.

The original production schedule for F-84Fs prepared in August 1950, called for the first deliveries of the production version by the autumn of 1951. As early as July 1951 the contractor advised the Air Force that the contract schedule would have to be set back due to serious delays in the production of wing forgings and the engines. These delays were the result of quantity procurement made at a time when the F-84F was thought of as a further development of the F-84E already being successfully produced, instead of as an almost entirely new aircraft with a brand-new engine.

In the meantime production continued on a straight-wing Thunderjet. After completion of the first YF-84F, Republic delivered 145 F-84E-20, followed by 130 F-84E-25 and 160 F-84E-30 ordered after the Korean War began, and fitted with new tail pipes for added thrust. These brought their top speed to 619 m.p.h. at sea level and 543 m.p.h. at 35,000 ft., and the F-84E production total to 843. They were used in Korea by the 27th, 49th, 116th, and 136th Fighter Wings, and in 1951 became the first American jets exported to NATO allies Belgium and France.

The last F-84E-30 in June 1951 was followed by the first F-84G-1, with the 5,600-lb. thrust J35-A-29, provision for air-to-air refuelling, and reinforced canopy. The Gs were a straight-wing interim model intended to fill the production gap until the F was ready in quantity. Delays in getting the swept-wing model into production were so time-consuming that the G became the most widely produced F-84 model, with 3,025 built. Not until the last day of the Korean War, 27th July 1953, was the last F-84G delivered,

Contrast the first F-84F-1 with the line-up of F-84G-11 Thunderjets. (Photo: Republic)



In-flight refuelling of an F-84F-25 by a KB-29 tanker. (Photo: Republic)

bringing the straight-wing Thunderjet total to 4,457. At that time, straight-wing F-84Gs were being used by fourteen U.S.A.F. Wings and ten other air forces.

QUANTITY PRODUCTION

At last, quantity delivery of the swept-wing could begin. The first production F-84F-1-RE, *51-1346*, was flown on 22nd November 1952. Ten were built with early U.S.-built Wright J25-W-1 turbojets, but the F-84F-5-RE had the 7,220-lb. thrust J65-W-3 standardised for production aircraft, or the equivalent Buick-built J65-B-3, and deliveries began in quantity in the latter part of 1953.

Production F-84Fs were named Thunderstreaks, and had several important improvements over earlier models. The cockpit canopy, previously a sliding bubble type, now was a hinged arm, upward-swinging type that raised the part of the enclosure above the pilot. For normal exits it is pushed up to open, but in emergencies the cover is released from the plane to allow seat ejection. This canopy was stronger, easier to install, and better sealed than the sliding cover.

Although previous models had a single, unperforated speed brake on the fuselage bottom, the F-84F had two perforated panels on the fuselage sides just behind the wing trailing edge. They can be opened at any speed up to the maximum dive speed without large trim changes or excessive buffeting.

Another innovation on the swept-wing model was the leading-edge wing-slats to improve airflow characteristics. Control tabs were removed from the ailerons in favour of an irreversible power-boosted control system. The swept-back tail on the first 275 production ships was the conventional stabiliser and elevator, but by the end of 1953, the first F-84F-25, *51-1621*, appeared with the one-piece surface in which the entire horizontal area was used for control and trim. More positive control was obtained from this so-called "all-flying", or all-movable tail.

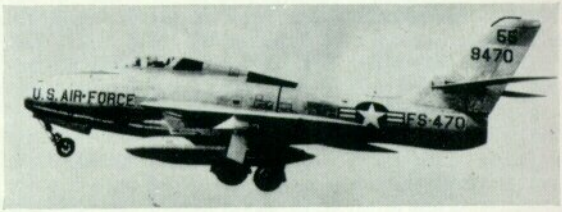
Six ·50 calibre M-3 guns with 1,800 rounds of ammunition are mounted in the same way on the F-84F as on previous models, with four on the gun deck ahead of the cockpit, and one in each wing root. Wing-tip tanks are impractical on swept wings, but the inboard pylons can accommodate two 450-gallon drop tanks or two 2,000-lb. bombs. Use of the two outboard pylons permitted the full load of 6,000 lb. of bombs or a combination of rockets.

The most destructive weapon carried by the Thunderstreak was a Mk. 6 nuclear store, carried under the port wing. In order to escape a blast greater than the one at Hiroshima, the F-84F had to deliver the weapon by a low-altitude bombing system (LABS). This device selects the right moment to release the bomb during a loop, after which the aircraft escapes with a turn.

Weighing 13,645 lb. empty, the F-84F-25, or AP-23M-3, as it was known on company records, had a normal gross weight of 25,226 lb. Performance included a top speed of 685 m.p.h. at sea level and 608 m.p.h. at 35,000 ft., at a combat weight of 18,700 lb. Climb was 7,000 ft. in one minute, and 35,000 ft. in 7·8 minutes. Service ceiling at full load was 36,150 ft., and combat ceiling at combat weight was 42,250 ft. Stalling speed was 151 m.p.h., and the Thunderjet was known for long take-off runs. Normal combat radius was 850 miles, and when the Thunderstreak had its full load of 1,758 gallons and take-off weight of 27,000 lb. a ferry range of 2,314 miles. An MB-2 autopilot and TACAN radio-navigation equipment aided the pilot on long flights.

Intercontinental ranges were obtained through use of inflight refuelling. The first Republic jets to use this method were F-84Es fitted for the British probe and drogue system. Boeing's flying boom system was adopted for standard air force use and the F-84G had its refuelling receptacle in the port wing's leading edge. In the F-84F, the receptacle is aft of the leading-edge

Red stars on a Thunderstreak! But only for its rôle as a "MiG-15" in the film "Jet Attack"; photo taken at Tucson in May 1959. (Photo: Richard Camm)



Kansas-built F-84F-35-GK taking off. (Photo: Republic)

Thunderstreak in the livery of T.A.C. and the Virginia Air National Guard. (Photo: Roger Besecker)

The URF-84F prototype 51-1828, *with sliding canopy.*
(Photo: Bowers' Collection)

The YF-84J in flight. (Photo: Republic)

The bizarre-looking XF-84H. (Photo: Republic)

area, with a single-piece rear-hinged door, which when opened extends the nozzle up into the airstream.

In March 1955, the F-84F-50 appeared with the J65-W-7 (or J65-B-7) or 7,800 lb. thrust. While airframe limitations prevented improvement of low level speed, the added power increased climb to 7,400 ft. the first minute, and combat ceiling to 44,850 ft.

Production of the Thunderstreak at Farmingdale accelerated with the aid of subcontractors like Kaiser Metal Products, building the aft fuselage and empennage in Bristol, Pennyslvania, Servel building wings in Evansville, Indiana, and Goodyear Aircraft building the cockpit windshield, canopy, and turtle deck.

A second source of production was established by a contract approved in June 1952, in which General Motors built Thunderstreaks in the Kansas City factory once used by North American to build B-25 Mitchells in W.W.II. General Motors built 599 Thunderstreaks, known as F-84F-GK when built in Kansas.

Production at the Farmingdale home plant reached a total of 2,112 F-84F Thunderstreaks, with the last F-84F-75-RE delivered in August 1957. This last version had a new fairing under the fuselage for the braking chute, a device also retrospectively fitted to earlier models. The 16-ft. diameter parachute trailed 35-ft. behind the wing, reducing stopping distance from 3,400 to 2,400 ft.

The U.S.A.F. had the F-84F in service with twelve Wings in June 1955. Six of these were attached to the Strategic Air Command to escort and support bomber operations, but as the day of slow-moving formations of propeller-driven bombers had ended, S.A.C. relinquished its fighter units to Tactical Air Command. All F-84Fs were then operated by T.A.C. as ground-support fighter-bombers.

Gradually, the F-84F was replaced in front-line service by the F-100, and given to Air National Guard units. In 1961, however, it was called back into front-line active duty with the Berlin Crisis. The 141st Tactical Fighter Squadron from McGuire Air Force Base, the 163rd T.F.S. from Fort Wayne, Indiana, and the 166th T.F.S. from Columbus, Ohio, were Air National Guard F-84 squadrons deployed to Europe, while re-activated U.S.A.F. units received F-84Fs.

The F-84F was used by T.A.C.'s 12th, 15th, and 366th Tactical Fighter Wings until their replacement by F-4Cs in 1964–65. In 1965, eight Air National Guard Squadrons still used the F-84F.

THE NATO THUNDERSTREAKS

When the F-84F was chosen to replace the straight-wing Thunderjet as the standard fighter-bomber for North Atlantic Treaty Organisation forces, new and more colourful markings appeared on the flanks. Of 2,711 Thunderstreaks built, 1,301 were dispatched to Europe for allied nations.

France received its first Thunderstreaks in 1955 with the re-equipment of French Tactical Air Command's *Escadres:* the 1st, 3rd, 4th, 6th, and 11th. These became the first, and so far the only, F-84Fs to enter combat.

The occasion was the Suez Crisis of 1956, when France and England collaborated with Israel against Egypt. On 23rd October 1956, thirty-six Thunderstreaks from the 1st *Escadre* at St. Dizier flew to the Israeli base at Lydda, and about the same time more F-84Fs from the 3rd *Escadre* moved from Rheims to Akrotiri on Cyprus.

Painted with black and yellow "invasion" stripes for instant recognition*, the French fighters at Lydda were to support the Israeli force that invaded Sinai on 29th October. After direct attacks began on 1st November on Egyptian air fields by the Cyprus-based units, twenty Egyptian Il-28 jet bombers fled to Luxor, where they were destroyed on the ground by the Lydda-based pilots. Meeting only negligible

**The Israel-based fighters appeared to have had their French marking temporarily covered by Israeli markings for political reasons.*

The Tactical Air Command insignia is displayed on the tail of this F-84F-35-RE.
(Photo: Roger Besecker)

Fine study of the fourth RF-84F Thunderflash. (Photo: Republic)

resistance from the Egyptian Air Force, operations against hostile air bases were concluded on 6th November, and only one F-84F, with its pilot, was lost.

Belgium began receiving F-84Fs in August 1955, and by the following year the 2nd and 10th Fighter-bomber Wings had replaced their Thunderjets with the Thunderstreaks. The six tactical fighter-bomber squadrons of the Netherlands Air Force, Nos. 311 to 316 inclusive, standardised on F-84Fs in 1956. That year also saw the Italian Air Force equip three Air Brigades (as U.S. Wing) with F-84Fs, *Aerobrigata* 5a, 51, and 51a.

It was the revived German Air Force that received the F-84F in largest numbers. Thunderstreaks began arriving in November 1956, the first combat aircraft received by the new *Luftwaffe* since W.W.II. An operational training unit, *Waffenschule* 30, was formed to familiarise German pilots with the aircraft. On 20th June 1958 the first German fighter-bomber wing, *Jabo** G.31, and became operational, four more, *Jabo* G.32, 34, 35, and 36 were soon added.

The Germans continued to utilise the F-84F until the F-104G became available, the type which has also replaced most of the Belgium and Dutch Thunderstreaks. Some of the ex-*Luftwaffe* aircraft have gone to Greece and Turkey, who operated until 1965 six squadrons each of F-84Fs.

THE RF-84F THUNDERFLASH

A fast photo-reconnaissance jet was required by the Air Force to replace its ageing RF-80s, and the third YF-84F, with its wing root air intakes, offered a potential camera arrangement with only small thrust losses.

Forty-one RF versions were ordered in a contract approved in June 1952, and the first was completed in February 1952 as a pre-production prototype, the YRF-84F, *51-1828*, had wing root inlets, a new nose enlarged to accommodate cameras, four 50-calibre wing guns, and a reinforced sliding canopy. Later, dual fences were added to each wing.

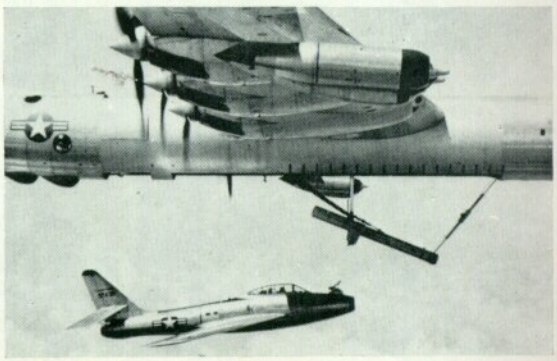
Deliveries of production RF-84F Thunderflashes began in March 1954, with the first RF-84F-1, *51-1829*, displaying the same upward hinging canopy of the F-84Fs. The 363rd Tactical Reconnaissance Wing of T.A.C., at Shaw AFB, South Carolina was the first operational with the RF-84. Early blocks used the Wright J65-W-3, or its Buick counterpart, but the J65-W-7 of 7,800-lb. thrust was introduced on the RF-84F-20 in June 1955. Equipment included four 50-calibre wing guns with 400 rounds, and six cameras of various types in the nose.

With a full fuel load of 1,475 gallons, including two 450-gallon drop tanks, the RF-84F-20 weighed 25,390 lb. at take-off. At a combat weight of 20,091 lb. top speed ranged from 629 m.p.h. at sea level to 582 m.p.h. at 35,000 ft. Climb was 5,820 ft. the first minute, and service ceiling 36,300 ft. Combat radius was 840 miles, and ferry range 1,800 miles.

By June 1956 four U.S.A.F. reconnaissance wings were fitted with RF-84Fs. Although they were replaced in front-line units by McDonnell RF-101s, the F-84Fs served seven Air National Guard Squadrons through 1965.

**For* Jagdbombergeschwader.

Two stages in the remarkable FICON project, which increased the reconnaissance range of the F-84F to almost 5,000 miles. The mother plane is an RB-36F. (Photos: Republic)



Of 715 RF-84F Thunderflashes built at Farmingdale by January 1958, 386 were sent overseas as part of the Mutual Aid programme, and were more widely distributed than their fighter counterparts. They equipped two *Geschwader*, *Aufkl.* G51 and 52, of the *Luftwaffe*, the French Air Forces' 33rd *Escadre*, Belgium's 42*eme Escadrille*, the Netherlands' No. 306 Squadron, Denmark's No. 724 Squadron, Norway's No. 717 Squadron, and the 3a *Aerobrigata* in Italy. The Greek, Turkish, and Chinese Nationalist air arms also had one squadron of RF-84Fs each.

FICON AIRCRAFT

The FICON (FIghter CONveyor) project was begun originally as a way to extend the range of fighter planes by teaming the F-84 with the giant Convair B-36 bomber. Development of small nuclear bombs and the RF version added new possibilities, with the photo-reconnaissance mission being the one chosen for actual service.

An F-84E was chosen for the original experiments, making the first contact flight on 9th January 1952 and the first complete cycle of retrieve, retraction, and launch on 23rd April 1952. In 1953 the experiments entered a new phase when the original YF-84F prototype was fitted with a probe ahead of the cockpit. This probe engaged an H-shaped cradle lowered from the bomb bay of the RB-36F-1 mother plane. The fighter's horizontal tailplane was bent downwards.

During the latch-on the probe operated by engaging a latch in the yoke's crotch, the yoke then was lowered over the fighter to engage hooks in the fuselage, providing a three-point suspension for lifting the F-84F into the larger plane's bomb bay.

As the system proved out, twenty-five RF-84Fs were modified by Republic to RF-84K FICON configuration with nose probe and downward tailplane. They were used by the 91st Strategic Reconnaissance Squadron, Malmastrom AFB, Great Falls, Montana, working with GRB-36 mother ships operated from Spokane, Washington. The conveyor system increased the radius of the jets from 840 miles to nearly 5,000 miles, but was abandoned in the spring of 1956 when the B-36 was phased out of service. Perhaps appearance in service that year of the U-2 presented another way of deep penetration reconnaissance.

Michigan Air National Guard RF-84F-15-RE.
(Photo: David W. Menard)

F-84F 52-7143 *of the 3rd Sqdn., 2nd Wing,* Aviation Belge Militaire, *based at Florennes.* (Photo: David W. Menard)

RF-84F of Belgium's 42nd Recce. Sqdn.
(Photo: David W. Menard)

Luftwaffe *F-84F in early natural metal finish; compare this* Jabo *G33 aircraft with the painting on page 2 of this* Profile.
(Photo: David W. Menard)

Red-tailed RF-84F (*ex*-53-7689A) *of* Luftwaffe Aufklarung *51 photographed at Wethersfield, England, in May 1960.*
(Photo: G. J. Letzter)

Thunderstreaks of the Italian 5th Aerobrigata *bear the "Archer" emblem carried by Macchi fighters in W.W.II.* (Photo: G. Apostolo)

SPECIAL MODIFICATIONS

The 88th and 89th F-84F-25 were completed with the General Electric YJ73-GE-7 of 8,920 lb. thrust and designated YF-84J. First flown 7th May 1954, YF-84J, *51-1708*, had a deeper fuselage and nose scoop.

Although designated XF-84H, Republic's turbo-prop fighter used few F-84F components and was an entirely new aircraft designed in 1952 around the Allison XT-40-A-1 delivering 5,332 h.p. to an Aero-products three-bladed supersonic propeller and 1,296-lb. thrust out of the tailpipe. Two prototypes were built to a separate contract, with the first, *51-1759*, flying on 22nd July 1955, with a Tee tail anti-torque fin. Due to the numerous mechanical difficulties with the experimental engine, the second prototype was not flown.

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AIR NATIONAL GUARD UNITS WITH F-84Fs

Squadron	Wing	Base
112 T.F.S.	122 T.F.W.	Toledo, Ohio
113 T.F.S.	122 T.F.W.	Terre Haute, Ill.
149 T.F.S.	108 T.F.W.	Richmond, Va.
162 T.F.S.	121 T.F.W.	Springfield, Ohio
163 T.F.S.	122 T.F.W.	Fort Wayne, Ohio
164 T.F.S.	121 T.F.W.	Mansfield, Ohio
169 T.F.S.	131 T.F.W.	Peoria, Ill.
170 T.F.S.	131 T.F.W.	Springfield, Ill.

AIR NATIONAL GUARD UNITS WITH RF-84Fs

Squadron	Wing	Base
106 T.R.S.	117 T.R.W.	Birmingham, Ala.
107 T.R.S.	127 T.R.W.	Detroit, Mich.
153 T.R.S.	117 T.R.W.	Meridan, Miss.
160 T.R.S.	117 T.R.W.	Montgomery, Ala.
171 T.R.S.	127 T.R.W.	Detroit, Mich.
173 T.R.S.	127 T.R.W.	Lincoln, Neb.
184 T.R.S.	117 T.R.W.	Fort Smith, Ark.

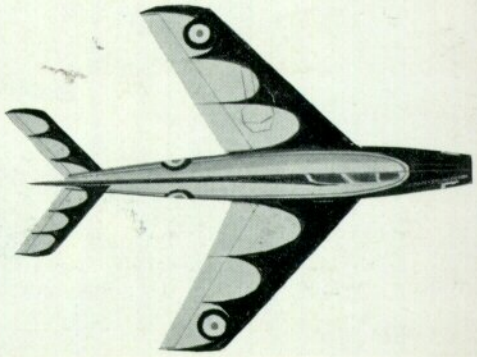
REPUBLIC F-84F SERIAL NUMBERS

No. A/C	Type	Contract	U.S.A.F. Serials
1	YF-84F-RE	AF22053	*49-2430*
2	YF-84F-RE	14803	*51-1344* to *51-1345*
10	F-84F-1-RE	14803	*51-1346* to *51-1355*
25	F-84F-5	14803	*51-1356* to *51-1380*
50	F-84F-10	14803	*51-1381* to *51-1430*
80	F-84F-15	14803	*51-1431* to *51-1510*
110	F-84F-20	14803	*51-1511* to *51-1620*
87	F-84F-25	14803	*51-1621* to *51-1707*
2	YF-84J	14803	*51-1708* to *51-1705*
51	F-84F-25	14803	*51-1710* to *51-1769*
67	F-84F-30	14803	*51-1761* to *51-1820*
10	F-84F-1-GK	18503	*51-9311* to *51-9327*
25	F-84F-5-GK	18503	*51-9321* to *51-9330*
21	F-84F-10-GK	18503	*51-9336* to *51-9356*
43	F-84F-25-GK	18503	*51-9357* to *51-9409*
45	F-84F-30-GK	18503	*51-9410* to *51-8454*
49	F-84F-35-GK	18503	*51-9455* to *51-9503*
44	F-84F-40-GK	18503	*51-9504* to *51-9547*
2	XF-84H	20501	*51-17059* to *51-17060*
28	F-84F-35-CRF	14803	*51-17061* to *51-17088*
68	F-84F-30-RE	6704	*52-6355* to *52-6422*
97	F-84F-35-RE	6704	*52-6423* to *52-6519*
3	F-84F-35-GE	AF6704	*52-6520* to *52-6522*
120	F-84F-40-GE	AF6704	*52-6523* to *52-6642*
170	F-84F-45	AF6704	*52-6643* to *52-6812*
95	F-84F-50	AF6704	*52-6813* to *52-6907*
100	F-84F-55	AF6704	*52-6908* to *52-7007*
10	F-84F-56	AF6704	*52-7008* to *52-7017*
32	F-84F-35	AF6704	*52-7018* to *52-7049*
40	F-84F-40	AF6704	*52-7050* to *52-7089*
25	F-84F-45	AF6704	*52-7090* to *52-7114*
12	F-84F-46	AF6704	*52-7119* to *52-7126*
65	F-84F-51	AF6704	*52-7127* to *52-7191*
37	F-84F-56-RE	AF6704	*52-7192* to *52-7228*
68	F-84F-41-KC	18503	*52-8767* to *52-8834*
148	F-84F-46-KC	18503	*52-8835* to *52-8982*
146	F-84F-51-KC	18503	*52-8983* to *52-9128*
29	F-84F-56-RE	6704	*52-10510* to *52-10538*
184	F-84F-61-RE	22316	*52-6532* to *52-6715*
120	F-84F-66-RE	22316	*52-6716* to *52-6835*
120	F-84F-71-RE	22316	*52-6836* to *52-6955*
275	F-84F-75-RE	22316	*52-6956* to *52-7230*

RF-84F SERIAL NUMBERS

No. A/C	Model	Contract	Date	U.S.A.F. Serials
1	YRF-84F	14810	6–12–51	*51-1828*
40	RF-84F	14810	6–12–51	*51-1829* to *51-1868*
90	RF-84F	14810	31–8–51	*51-1869* to *51-1958*
48	RF-84F-RE	14810	12–6–51	*51-11250* to *51-11297*
63	RF-84F-RE	14810	25–9–51	*51-16996* to *51-17058*
5	RF-84F-21	6581	28–6–52	*52-7229* to *52-7233*
2	RF-84F-20	6581	28–6–52	*52-7234* to *52-7235*
8	RF-84F-21	6581	28–6–52	*52-7236* to *52-7243*
35	RF-84F-20	6581	28–6–52	*52-7244* to *52-7276*
8	RF-84F-26	6581	28–6–52	*52-7279* to *52-7286*
9	RF-84F-25	6581	28–6–52	*52-7287* to *52-7295*
12	RF-84F-26	6581	28–6–52	*52-7296* to *52-7307*

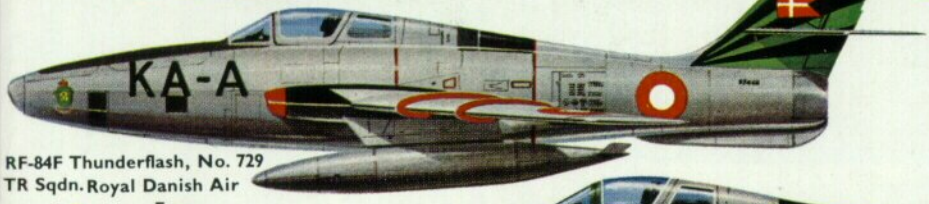
Planview detail of 6th Aerobrigata *F-84F.*



F-84F Thunderstreak, Thunderbirds Aerobatic Team.

Thunderbirds insignia

42 TR Sqdn.



RF-84F Thunderflash, No. 729 TR Sqdn. Royal Danish Air Force.

729 TR Sqdn.

10 Fighter Wing.

27 F. Sqdn.

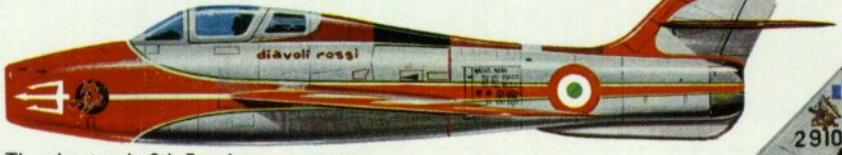
RF-84F Thunderflash, No. 42 Tactical Reconnaissance Squadron, Belgian Air Force, Bierset, Belgium.

F-84F Thunderstreak, 6th *Aerobrigata* Aerobatic Team, "*Diavoli Rossi*", Italian Air Force, Ghedi, Italy, 1958.

Port fin 9-BJ.

F-84F Thunderstreak, No. 27 Fighter Squad No. 10 Fighter Wing, Belgian Air Force.

6th *Aerobrigata* "*Diavoli Rossi*".



F-84F Thunderstreak, 9th *Escadre*, II/9 *Escadron*, French Air Force, Metz, France.

Stbd. fin 9-BJ.

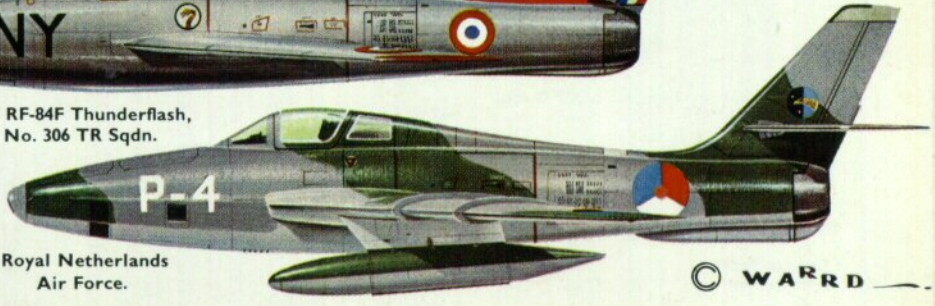
Port side 1-NY.

F-84F Thunderstreak,

1st *Escadre*, I/3 *Escadron*, French Air Force.

No. 306 TR Sqdn.

RF-84F Thunderflash, No. 306 TR Sqdn.



Royal Netherlands Air Force.

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Belgian Thunderflash over the Channel. (Photo: AVI. BEM.)

RF-84F SERIAL NUMBERS *continued*

11	RF-84F-25	6581	28–6–52	*52-7308* to *52-7318*
21	RF-84F-26	6581	28–6–52	*52-7319* to *52-7339*
12	RF-84F-25	6581	28–6–52	*52-7340* to *52-7351*
3	RF-84F-26	6581	28–6–52	*52-7352* to *52-7354*
23	RF-84F-25	6581	28–6–52	*52-7355* to *52-7377*
8	RF-84F-30-RE	AF6581	28–6–52	*52-7378* to *52-7385*
20	RF-84F-31	AF6581	28–6–52	*52-7386* to *52-7405*
27	RF-84F-30	AF6581	28–6–52	*52-7406* to *52-7432*
40	RF-84F-31	AF6581	28–6–52	*52-7433* to *52-7472*
1	RF-84F-35	AF6581	28–6–52	*52-7473*
2	RF-84F-36	AF6581	28–6–52	*52-7474* to *52-7475*
50	RF-84F-36	AF6581	28–6–52	*52-8717* to *52-8766*
12	RF-84F-35-RE	22315	3–4–53	*53-7521* to *53-7532*
9	RF-84F-36	22315	3–4–53	*53-7533* to *53-7541*
17	RF-84F-35	22315	3–4–53	*53-7542* to *53-7558*
32	RF-84F-36	22315	3–4–53	*53-7559* to *53-7590*
26	RF-84F-35	22315	3–4–53	*53-7591* to *53-7616*
17	RF-84F-35	22315	3–4–53	*53-7617* to *53-7633*
7	RF-84F-35	22315	3–4–53	*53-7634* to *53-7640*
57	RF-84F-36	22315	3–4–53	*53-7641* to *53-7697*

F-84F of Jagdbombergeschwader *32 at altitude, photographed by a brother pilot.* (Photo: Gerhard Joos)

Jabo *G34 machine carrying yellow drop tanks. Note* Geschwader *emblem on nose.* (Photo: Gerhard Joos)

SPECIFICATION

(Data selected from the Official Standard Aircraft Characteristics Charts dated 2nd September 1958)

	F-84F-25	F-84F-50	RF-84F-20
Span	33·6 ft.	33·6 ft.	33·6 ft.
Length	43·4 ft.	43·4 ft.	47·5 ft.
Height	15 ft.	15 ft.	15 ft.
Wing area	325 sq. ft.	325 sq. ft.	325 sq. ft.
Powerplant	J65-W-3	J65-W-7	J65-W-7
Thrust	7,220 lb.	7,800 lb.	7,800 lb.
Weight: Empty	13,645 lb.	13,645 lb.	14,014 lb.
Take-off	25,226 lb.	25,226 lb.	25,390 lb.
Ferry	27,000 lb.	27,000 lb.	27,000 lb.
Combat	18,700 lb.	18,700 lb.	20,091 lb.
Fuel: Normal	1,479 gal.	1,479 gal.	1,475 gal.
Maximum	1,758 gal.	1,758 gal.	—
Speed: Top at sea level (5,000 ft. on RF-84F)	658 m.p.h. (595 knots)	658 m.p.h. (595 knots)	629 m.p.h. (547 knots)
Top at 35,000 ft.	608 m.p.h. (528 knots)	612 m.p.h. (532 knots)	582 m.p.h. (506 knots)
Cruising	539 m.p.h.	539 m.p.h.	542 m.p.h.
Stalling	151 m.p.h.	151 m.p.h.	166 m.p.h.
Ceiling: Service	36,150 ft.	37,500 ft.	36,500 ft.
Combat	42,250 ft.	44,850 ft.	—
Climb, minutes	7,000 ft./1 min.	7,400 ft./1 min.	5,820 ft./1 min.
	35,000 ft./7·8 min.	35,000 ft./7·2 min.	35,000 ft./11·6 min.
Combat radius	860 miles	856 miles	840 miles
Ferry range	2,314 miles	2,343 miles	1,800 miles

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